

General SAR test reduction & exclusion guidance

KDB 447498

Section 4.3 General SAR test reduction and exclusion guidance

For Standalone SAR exclusion consideration, when SAR Exclusion Threshold requirement in KDB 447498 is satisfied, standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.

The SAR Test Exclusion Threshold for operation in the range 100 MHz to 6 GHz is determined as follows.

$$\text{SAR Exclusion Threshold (SARET)} = \text{Step 1} + \text{Step 2}$$

Step 1

$$\text{NT} = [(\text{MP}/\text{TSDA}) * \sqrt{f\text{GHz}}]$$

NT = Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)

MP = Max Power of channel (mW) (inc tune up)

TSDA = Min Test separation Distance or 50 mm (whichever is lower) = 5 mm (in this case)

We can transpose this formula to allow us to find the maximum power of a channel allowed and compare this to the measured maximum power.

$$= [(\text{NT} * \text{TSDA}) / \sqrt{f\text{GHz}}]$$

For Distances Greater than 50 mm Step 2 applies

Step 2

$$(\text{TSDB} - 50\text{mm}) * 10$$

Where:

TSDB = Min Test separation Distance (mm) = 50

Note: Step 2 is not required here as the TSDA is less than 50 mm.

Channel Frequency (MHz)	EIRP* (mW)	SAR Exclusion Threshold at 5 mm (mW)	SAR Evaluation
433.96	0.11	22.77	Not Required

* EIRP was calculated from field strength. As the antenna gain is unknown, so the EIRP was used, instead of conducted power.

Therefore standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.